

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/003314

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C07D239/42 C07D401/04 A61K31/505 A61K31/506

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, PAJ, WPI Data, BEILSTEIN Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CROOK, STEPHEN ET AL: "Reactions of nucleophiles with some N-methyl-1,2,4-thiadiazolium salts" JOURNAL OF THE CHEMICAL SOCIETY, PERKIN TRANSACTIONS 1: ORGANIC AND BIO-ORGANIC CHEMISTRY (1972-1999), (15), 1791-6 CODEN: JCPRB4; ISSN: 0300-922X, 1977, XP009042422 see compound 31	1-4
X	ROBEV, S.: "Production of pyrimidine derivatives by reacting aromatic N-monoaryl substituted amidines with ylidemalononitriles" DOKLADY BOLGARSKOI AKADEMII NAUK, 30(5), 719-22 CODEN: DBANAD; ISSN: 0366-8681, 1977, XP009042404 see formula V and attached structures	1-4



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the International filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the International filing date but later than the priority date claimed

T later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the International search

Date of mailing of the International search report

19 January 2005

31/01/2005

Name and mailing address of the ISA
 European Patent Office, P.B. 5818 Patentkant 2
 NL - 2280 HV Rijswijk
 Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Scruton-Evans, I

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/IB2004/003314

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROBEV, S.: "Conversion of 2,6-disubstituted-4-(aryl amino)-5-cyanopyrimidines to 2,5-disubstituted-3-(aryl amino)-4-cyanopyrroles" DOKLADY BOLGARSKOI AKADEMII NAUK, 31(2), 197-20 CODEN: DBANAD; ISSN: 0366-8681, 1978, XP009042412 see attached structures	1-4
X	ROBEV, S.: "Synthesis of pyrimido(4,5-b)quinoline derivatives" DOKLADY BOLGARSKOI AKADEMII NAUK, 31(5), 551-4 CODEN: DBANAD; ISSN: 0366-8681, 1978, XP009042403 see formula I and attached structures	1-4
X	ROBEV, S.: "Synthesis of 9,11,12-triazabenzo(a)anthracene derivatives" DOKLADY BOLGARSKOI AKADEMII NAUK, 32(7), 903-6 CODEN: DBANAD; ISSN: 0366-8681, 1979, XP009042411 see attached structures	1-4
X	ROBEV, S.: "Synthesis of some biphenyl substituted 5-cyanopyrimidines" DOKLADY BOLGARSKOI AKADEMII NAUK, 32(3), 309-11 CODEN: DBANAD; ISSN: 0366-8681, 1979, XP009042410 see examples	1-4
X	ROBEV, S.: "Method for the synthesis of some 7,8,10-triazabenzo(a)anthracenes" DOKLADY BOLGARSKOI AKADEMII NAUK, 33(7), 929-32 CODEN: DBANAD; ISSN: 0366-8681, 1980, XP009042408 see formula Ia-Id	1-4
X	MINCHEVA, M.: "Preparation of 2,4-disubstituted 6-chlorophenyl-5-cyanopyrimidines" DOKLADY BOLGARSKOI AKADEMII NAUK, 33(7), 925-7 CODEN: DBANAD; ISSN: 0366-8681, 1980, XP009042409 see formula III and examples	1-4
X	ROBEV, S.: "2,6-Disubstituted 4-(biphenylamino)-5-cyanopyrimidines" DOKLADY BOLGARSKOI AKADEMII NAUK, 33(6), 791-4 CODEN: DBANAD; ISSN: 0366-8681, 1980, XP009042407 see formula 5a-5e	1-4
		-/-

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/003314

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROBEV, S.: "Lithium-mediated rearrangement of sterically hindered aromatic aldehyde aryl hydrazones" DOKLADY BOLGARSKOI AKADEMII NAUK , 36(2), 233-6 CODEN: DBANAD; ISSN: 0366-8681, 1983, XP009042406 see formulae III and IV	1-4
X	BRIEL, DETLEF: "Synthesis of 4-oxo-, 4-thioxo-, or 4-aminopyrimidines from 1,2,4-dithiazolium salts" LIEBIGS ANNALEN DER CHEMIE , (4), 345-8 CODEN: LACHDL; ISSN: 0170-2041, 1991, XP001204735 see formula 8	1-4
X	SCHMIDT, RICHARD R.: "Novel synthesis of pyrimidine derivatives" CHEMISCHE BERICHTE , 98(2), 346-51 CODEN: CHBEAM; ISSN: 0009-2940, 1965, XP009042438 see formula XIa,b	1-4
X	WEIDINGER, HANS ET AL: "Syntheses of 4,5-disubstituted 2,6-diarylpyrimidines" JUSTUS LIEBIGS ANNALEN DER CHEMIE , 716, 143-6 CODEN: JLACBF; ISSN: 0075-4617, 1968, XP009042439 see 10,11	1-4
X	JOSE DE MELO, SEBASTIAO ET AL: "Synthesis of new 4-amino-2,6-diarylpyrimidine-5-carbonitriles" JOURNAL OF CHEMICAL RESEARCH, SYNOPSIS , (5), 216-217 CODEN: JRPSDC; ISSN: 0308-2342, 2002, XP009042416 see 5a-5e	1-4
X	SCHULZE W ET AL: "STICKSTOFFFLOST-VERBINDUNGEN AUS N,N-BIS- β -CHLOR-AETHYL-P-TRI-CYANVINYL-ANILIN UND AMINEN, HYDRAZINEN UND AMIDINEN" CHEMISCHE BERICHTE, VERLAG CHEMIE GMBH. WEINHEIM, DE, vol. 99, no. 11, 1966, pages 3492-3502, XP000575951 ISSN: 0009-2940 see compound 27	1-4
X	WO 03/068757 A (HOFFMANN LA ROCHE) 21 August 2003 (2003-08-21) see formula IVa, page 10 and examples 80-87	1-4
-/-		

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/003314

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROBEV, S.: "Ring contraction synthesis of 2,5-disubstituted-3-arylamino-4-cyano-pyrroles from 2,6-disubstituted-4-arylamino-5-cyanopyrimidines" TETRAHEDRON LETTERS, (13), 1163-6 CODEN: TELEAY; ISSN: 0040-4039, 1978, XP002314070 see formula I	1-4
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 21, 3 August 2001 (2001-08-03) & JP 2001 089452 A (SANKYO CO LTD), 3 April 2001 (2001-04-03) see general formula and examples abstract	1-4; 13-15
X	DD 236 310 A (UNIV LEIPZIG) 4 June 1986 (1986-06-04) see formula I and examples	1-4, 13
X	EL-REEDY A M ET AL: "AZOLOPYRIMIDINES AND PYRIMIDOQUINAZOLINES FROM 4-CHLOROPYRIMIDINES" JOURNAL OF HETEROCYCLIC CHEMISTRY, HETEROCORPORATION. PROVO, US, vol. 26, no. 2, 1989, pages 313-316, XP000929372 ISSN: 0022-152X see formula IIIa and VIII	1-4
X	RUDORF W-D ET AL: "ACYLKETEN-S,S- UND ACYLKETEN-S,N-ACETALE ALS BAUSTEIN FUER HETEROCYCLEN: 5-CYANOPYRIMIDINE" JOURNAL FUER PRAKTISCHE CHEMIE, LEIPZIG, DE, vol. 320, no. 4, 1978, pages 576-584, XP002908542 ISSN: 0021-8383 see formula 7, Table 5	1-4
E	WO 2004/089913 A (NOVARTIS PHARMA GMHBH ; NOVARTIS AG (CH); REVESZ LASZLO (CH); HERSPERG) 21 October 2004 (2004-10-21) the whole document	1, 13-15
A	WO 02/46171 A (SIGNAL PHARM INC) 13 June 2002 (2002-06-13) the whole document	1-15
A	US 2003/022898 A1 (TOWNSEND ROBERT M ET AL) 30 January 2003 (2003-01-30) the whole document	1-15
		-/-

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/003314

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/47690 A (CYTOVIA INC) 20 June 2002 (2002-06-20) see formula I, claim 13, formula II -----	1-15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/IB2004/003314

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03068757	A 21-08-2003	CA 2474578 A1 WO 03068757 A1 EP 1476435 A1 US 2003216382 A1	21-08-2003 21-08-2003 17-11-2004 20-11-2003
JP 2001089452	A 03-04-2001	NONE	
DD 236310	A 04-06-1986	DD 236310 A1	04-06-1986
WO 2004089913	A 21-10-2004	WO 2004089913 A1	21-10-2004
WO 0246171	A 13-06-2002	AU 2019502 A CA 2431160 A1 EP 1349841 A2 JP 2004523497 T US 2003203926 A1 WO 0246171 A2	18-06-2002 13-06-2002 08-10-2003 05-08-2004 30-10-2003 13-06-2002
US 2003022898	A1 30-01-2003	US 2002072523 A1 CA 2436770 A1 CZ 20032287 A3 EP 1363993 A2 HU 0304045 A2 JP 2004529088 T MX PA03006817 A NO 20033429 A WO 02060386 A2 AU 1182702 A CA 2424303 A1 EP 1325009 A2 HU 0302925 A2 JP 2004512281 T WO 0228860 A2	13-06-2002 08-08-2002 18-02-2004 26-11-2003 28-04-2004 24-09-2004 13-11-2003 24-09-2003 08-08-2002 15-04-2002 11-04-2002 09-07-2003 29-12-2003 22-04-2004 11-04-2002
WO 0247690	A 20-06-2002	AU 2892202 A EP 1351691 A1 WO 0247690 A1 US 2003069239 A1 US 2004097503 A1	24-06-2002 15-10-2003 20-06-2002 10-04-2003 20-05-2004